QUATERNARY RESEARCH

An Interdisciplinary Journal

EDITOR
Stephen C. Porter

ASSOCIATE EDITOR
Donald K. Grayson

Volume 21, 1984

ACADEMIC PRESS

San Diego Orlando San Francisco New York London
Toronto Montreal Sydney Tokyo São Paulo

Copyright © 1984 by the University of Washington
All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (21 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1984 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0033-5894/84 $3.00

MADE IN THE UNITED STATES OF AMERICA

CONTENTS OF VOLUME 21

NUMBER 1, JANUARY 1984

ARTICLES

ALAN C. MIX AND WILLIAM F. RUDDIMAN. Oxygen-Isotope Analyses and Pleistocene Ice Volumes 1

SIDNEY E. WHITE AND SALVATORE VALASTRO, JR. Pleistocene Glaciation of Volcano Ajusco, Central Mexico, and Comparison with the Standard Mexican Glacial Sequence 21

PETER J. MEHRINGER, JR., JOHN C. SHEPPARD, AND FRANKLIN F. FOIT, JR. The Age of Glacier Peak Tephra in West–Central Montana 36

P. E. CARRARA, W. N. MODE, MEYER RUBIN, AND S. W. ROBINSON. Deglaciation and Postglacial Timberline in the San Juan Mountains, Colorado 42

JULIO L. BETANCOURT AND OWEN K. DAVIS. Packrat Middens from Canyon de Chelly, Northeastern Arizona: Paleoecological and Archaeological Implications 56

L. D. DELORME AND S. C. ZOLTAI. Distribution of an Arctic Ostracod Fauna in Space and Time 65

HANS PETTER SEJRUP, EYSTEIN JANSEN, HELMUT ERLENKEUSER, AND HANS HOLTEDAHL. New Faunal and Isotopic Evidence on the Late Weichselian—Holocene Oceanographic Changes in the Norwegian Sea 74

JAN MANGERUD, SVEN ERIK LIE, HARALD FURNES, INGER LISE KRISTIANSEN, AND LEIF LØMO. A Younger Dryas Ash Bed in Western Norway, and Its Possible Correlations with Tephra in Cores from the Norwegian Sea and the North Atlantic 85

SHORT PAPERS

THOMAS J. CROWLEY. Atmospheric Circulation Patterns during Glacial Inception: A Possible Candidate 105

RUSSELL W. GRAHAM. Paleoenvironmental Implications of the Quaternary Distribution of the Eastern Chipmunk (*Tamias striatus*) in Central Texas 111

LETTERS TO THE EDITOR

ANN P. EL-MOSLIMANY. Comment on "Age, Palaeoenvironments, and Climatic Significance of Late Pleistocene Konya Lake, Turkey," by Neil Roberts 115

NEIL ROBERTS. Reply to Comments by Ann P. El-Moslimany 117

BOOK REVIEW

W. GEOFFREY SPAULDING. *Desertification and Development: Dryland Ecology in a Social Perspective*. Edited by Brian Spooner and H. S. Mann 121

NUMBER 2, MARCH 1984

ARTICLES

CLIMAP PROJECT MEMBERS. The Last Interglacial Ocean 123

JEAN-CLAUDE DUPLESSY, NICHOLAS J. SHACKLETON, ROBLEY K. MATTHEWS, WARREN PRELL, WILLIAM F. RUDDIMAN, MICHÈLE CARALP, AND CHRIS H. HENDY. ^{13}C Record of Benthic Foraminifera in the Last Interglacial Ocean: Implications for the Carbon Cycle and the Global Deep Water Circulation 225

WILLIAM R. HOWARD AND WARREN L. PRELL. A Comparison of Radiolarian and Foraminiferal Paleoecology in the Southern Indian Ocean: New Evidence for the Interhemispheric Timing of Climatic Change 244

NEW BOOKS RECEIVED 264

NUMBER 3, MAY 1984

ARTICLES

ZE'EV B. BEGIN AND STANLEY A. SCHUMM. Gradational Thresholds and Landform Singularity: Significance for Quaternary Studies 267

H. E. WRIGHT, JR. Late Glacial and Late Holocene Moraines in the Cerros Cuchpanga, Central Peru 275

WILLIAM J. WAYNE. Glacial Chronology of the Ruby Mountains–East Humboldt Range, Nevada 286

JAMES E. BEGET. Tephrochronology of Late Wisconsin Deglaciation and Holocene Glacier Fluctuations near Glacier Park, North Cascade Range, Washington 304

DEAN A. MCMANUS AND JOE S. CREAGER. Sea-Level Data for Parts of the Bering–Chukchi Shelves of Beringia from 19,000 to 10,000 14C yr B.P. .. 317

P. F. KARROW, B. G. WARNER, AND P. FRITZ. Corry Bog, Pennsylvania: A Case Study of the Radiocarbon Dating of Marl 326

BARRY G. WARNER, JOHN J. CLAGUE, AND ROLF W. MATHEWES. Geology and Paleoecology of a Mid-Wisconsin Peat from the Queen Charlotte Islands, British Columbia, Canada 337

CURTIS M. HUDAK. Paleoecology of an Early Holocene Faunal and Floral Assemblage from the Dows Local Biota of North-Central Iowa 351

KENNETH E. CAMPBELL, JR., AND DAVID FRAILEY. Holocene Flooding and Species Diversity in Southwestern Amazonia 369

JOHN CUSHING, MARLA DAILY, ELMER NOBLE, V. LOUISE ROTH, AND ADRIAN WENNER. Fossil Mammoths from Santa Cruz Island, California 376

DAVID R. MUERDTER, JAMES P. KENNETT, AND ROBERT C. THUNELL. Late Quaternary Sapropel Sediments in the Eastern Mediterranean Sea: Faunal Variations and Chronology 385

Book Review

Nicholas E. Pingitore, Jr. *Diagenesis in Sediments and Sedimentary Rocks, 2*. Edited by G. Larsen and G. V. Chilingar 404

Author Index for Volume 21 405

The Subject Index for Volume 21 will appear in the November 1984 issue as part of a cumulative index for the year 1984.